

## AMENDMENTS TO THE CLAIMS

Claims 1-9 (Canceled)

10. (New) An optical storage medium inspection apparatus comprising:

an optical pickup head that emits a light beam to an optical storage medium, detects a light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light;

a jitter measuring unit for measuring jitter in signals output from the optical pickup head;  
and

an evaluation unit for determining from the measured jitter if the optical storage medium is good or defective;

wherein the jitter measuring unit measures jitter in a train of  $3T$  or longer marks or spaces from an optical storage medium to which digital information is recorded as a train of marks or spaces of length  $kT$  based on a period  $T$  and an integer  $k$  of two or more.

11. (New) An optical storage medium inspection apparatus comprising:

an optical pickup head that emits a light beam to an optical storage medium, detects a light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light;

a jitter measuring unit for measuring jitter in signals output from the optical pickup head;  
and

an evaluation unit for determining from the measured jitter if the optical storage medium is good or defective;

wherein the jitter measuring unit measures jitter from an optical storage medium to which digital information is recorded as a train of marks or spaces of length  $kT$  based on a period  $T$  and an integer  $k$  of two or more, but does not measure jitter in signals obtained from edges of marks or spaces of length  $2T$ .

12. (New) An optical storage medium inspection apparatus according to claim 11, characterized by the jitter measuring unit measuring jitter from an optical storage medium on which the width of 2T-long marks is narrower than the width of marks longer than 2T.

13. (New) An optical storage medium inspection apparatus according to claim 11, characterized by  $I_{2pp}/I_{8pp} < 0.2$  where  $I_{2pp}$  is a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces and  $I_{8pp}$  is a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces.

14. (New) An optical storage medium inspection apparatus according to claims 11, characterized by  $ML < \lambda/(1.25 * NA)$  where ML is the length of a pair of digital data marks and spaces of length 2T,  $\lambda$  is the wavelength of the light beam emitted from the optical pickup head, and NA is the numeric aperture of the collector optics of the optical pickup head.

15. (New) An optical storage medium inspection apparatus according to claim 10, wherein the jitter measuring unit measures jitter from an optical storage medium having a first recording layer formed from a semi-transparent film that passes part of light incident thereon and a second recording layer, and wherein the jitter measuring unit measures jitter in a signal obtained from the second recording layer when the part of the light reaches the second recording layer through the first recording layer.

16. (New) An optical storage medium inspection apparatus according to claim 10, further comprising a gain adjustment means for reducing variation in the amplitude of signals input to a demodulation means when reflectivity of the optical storage medium varies.

17. (New) An optical storage medium inspection method for determining if an optical storage medium is good or defective, said method comprising:

emitting a light beam from an optical pickup head to the optical storage medium to which digital information is recorded as a train of marks or spaces of length kT based on a period T and an integer k;

receiving light reflected by a mark or space;  
measuring jitter in signals based on the reflected light, but not measuring jitter in signals obtained from edges of the shortest marks or spaces; and  
determining from the measured jitter whether the optical storage medium is good or defective.

18. (New) An optical storage medium inspection method according to claim 17, wherein the marks or spaces of the shortest length are marks or spaces of length  $2T$ .

19. (New) An optical disc drive apparatus comprising:  
an optical pickup head that emits a light beam to the optical storage medium, detects the light beam reflected from the optical storage medium having a recording layer for recording data, and outputs a signal based on the received reflected light; and  
a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium using two threshold values,  
whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark and space sequence to the recording layer, where  $k$  is an integer of 2 or more, and the width of a  $2T$  mark is narrower than the width of a  $3T$  or longer mark.

20. (New) An optical disc drive comprising:  
an optical pickup head that emits a light beam to an optical storage medium having a recording layer for recording data, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light; and  
a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium using maximum likelihood decoding,  
whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer, where  $k$  is an integer of 2 or more, and the width of a  $2T$  long digital data mark is narrower than the width of a digital data mark longer than  $2T$ .

21. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to an optical storage medium having a first recording layer and a second recording layer, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light, wherein the first recording layer is a semi-transparent layer that passes part of the light incident thereon, wherein light passing the first recording layer reaches the second recording layer; and

a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium using two threshold values,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the first recording layer, where  $k$  is an integer of 2 or more.

22. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to the optical storage medium having a first recording layer and a second recording layer, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light, wherein the first recording layer is a semi-transparent layer that passes part of the light incident thereon, wherein light passing the first recording layer reaches the second recording layer; and

a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium using maximum likelihood decoding,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the first recording layer, where  $k$  being an integer of 2 or more.

23. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to an optical storage medium having a first recording layer and a second recording layer, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light, wherein the first recording layer is a semi-transparent layer that passes part of the light incident thereon, wherein light passing the first recording layer reaches the second recording layer;

a clock generating means which receives signals output from the optical pickup head and extracting digital information recorded to the optical storage medium, generates a clock signal by treating as invalid signals obtained from the edges of  $2T$  digital data marks or spaces; and

a demodulation means that reproduces data recorded to the optical storage medium, whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the first recording layer, where  $k$  is an integer of 2 or more.

24. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to an optical storage medium having a recording layer, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light;

a clock generating means which receives signals output from the optical pickup head and extracting digital information recorded to the optical storage medium, generates a clock signal by treating as invalid signals obtained from the edges of  $2T$  digital data marks or spaces; and

a demodulation means that reproduces data recorded to the optical storage medium, whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer, where  $k$  is an integer of 2 or more, and the width of a  $2T$  digital data mark is narrower than the width of a digital data mark longer than  $2T$ .

25. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to an optical storage medium having a recording layer, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light;

a clock generating means for receiving signals output from the optical pickup head and extracting digital information recorded to the optical storage medium;

a demodulation means that reproduces data recorded to the optical storage medium;

a TE signal generating means used for tracking control; and

a tracking error signal generating means that generates a tracking error signal from change in the signals produced when the light beam strikes the edges of the mark or space sequence recorded to the optical storage medium, and generates the tracking error signal by invalidating signal change resulting from the light beam at the edges of  $2T$ -long digital data marks or spaces,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer, where  $k$  is an integer of 2 or more.

26. (New) An optical disc drive according to claim 19, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

27. (New) An optical disc drive according to claim 19, wherein the recording layer of the optical storage medium can be recorded only once.

28. (New) An optical disc drive according to claim 19, wherein the recording layer of the optical storage medium is read-only.

29. (New) An optical disc drive according to claim 21, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be recorded only once.

30. (New) An optical disc drive according to claim 21, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be repeatedly recorded and erased.

31. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to the optical storage medium having a recording layer for recording data, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light; and

a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium,

whereby the optical disc drive adjusts the length of a  $2T$  digital data mark so that the length detected from a pattern repeatedly recording  $2T$ -long digital data marks and spaces goes to the same level as a threshold value suitable for reproducing information in a pattern repeatedly recording  $3T$  or longer digital data marks and spaces,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer,  $k$  is an integer of 2 or more, and the width of a  $2T$  digital data mark is narrower than the width of a  $3T$  or longer digital data mark.

32. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to the optical storage medium having a recording layer for recording data, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light; and

a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium,

wherein the optical disc drive has an evaluation standard so that mark and space length is appropriate,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer, and  $k$  is an integer of 2 or more,

whereby the optical disc drive adjusts the length of digital data marks and spaces longer than  $2T$  so that the length is appropriate relative to the evaluation standard.

33. (New) An optical disc drive comprising:

an optical pickup head that emits a light beam to the optical storage medium having a recording layer for recording data, detects the light beam reflected from the optical storage medium, and outputs a signal based on the received reflected light; and

a demodulation means that receives the signal output from the optical pickup head and reproduces information recorded to the optical storage medium,

wherein the optical disc drive records information using  $k$  of 3 or more, when recording to the optical storage medium that is normally recorded with  $k$  being an integer of 2 or more,

wherein the optical disc drive adjusts the length of digital data marks and spaces of length  $3T$  or more so that the length is appropriate relative to the evaluation standard,

whereby digital data of length  $kT$  based on a period  $T$  is recorded as a mark or space sequence to the recording layer using an evaluation standard for adjusting mark and space length to an appropriate length.

34. (New) An optical disc drive according to claim 32, wherein the evaluation standard is jitter.

35. (New) An optical disc drive according to claim 32, wherein the evaluation standard is an error rate.

36. (New) An optical disc drive according to claim 32, wherein the evaluation standard is the time period of an obtained signal.

37. (New) An optical disc drive according to claim 31, wherein mark length is adjusted by adjusting the power of the laser beam emitted from the optical pickup head.

38. (New) An optical disc drive according to claim 31, wherein mark length is adjusted by adjusting the pulse width of the laser beam emitted from the optical pickup head.

39. (New) An optical disc drive according to claim 31, wherein the optical disc drive measures jitter from an optical storage medium where the width of  $2T$ -long digital data marks is narrower than the width of digital data marks longer than  $2T$ .

40. (New) An optical disc drive according to claim 31, wherein the optical disc drive measures jitter in a signal obtained by emitting a light beam to the first recording layer of an optical storage medium having a first recording layer and a second recording layer,



wherein the first recording layer is a semi-transparent film that passes part of the light incident thereon,

wherein the light passing the first recording layer reaches the second recording layer.

41. (New) An optical disc drive according to claim 19, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is I2pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is I8pp, and  $I2pp/I8pp < 0.2$ .

42. (New) An optical disc drive according to claim 19, where the length of a pair of digital data marks and spaces of length 2T is ML, the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is NA, and  $ML < \lambda/(1.25 * NA)$ .

43. (New) An optical disc drive according to claim 19, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

44. (New) An optical storage medium comprising:

a first recording layer as recording layers for recording information, wherein the first recording layer is a read-only recording layer; and

a second recording layer as recording layers for recording information, wherein the second recording layer is a recording layer enabling recording data only once, wherein the first recording layer is disposed closer to the light incidence side of the medium than the second recording layer,

whereby information is recorded or reproduced by exposure to a light beam.

45. (New) An optical storage medium comprising:

a first recording layer as recording layers for recording information, wherein the first recording layer is a read-only recording layer; and

a second recording layer as recording layers for recording information, wherein the second recording layer is a recording layer enabling repeatedly recording and erasing data, wherein the first recording layer is disposed closer to the light incidence side of the medium than the second recording layer,

whereby information is recorded or reproduced by exposure to a light beam.

46. (New) An optical storage medium including multiple tracks formed concentrically or in a spiral for recording information using marks and spaces between the marks by emitting a light beam to the recording surface of the tracks, wherein a signal not including edges adjacent to the shortest marks and/or the shortest spaces denotes a first playback signal quality.

47. (New) An optical storage medium according to claim 46, wherein a signal including edges adjacent to the shortest marks and/or the shortest spaces denotes a second playback signal quality.

48. (New) An optical storage medium according to claim 47, wherein the first playback signal quality is higher than the second playback signal quality.

49. (New) An optical storage medium according to claim 46, wherein jitter is detected as the playback signal quality.

50. (New) An optical storage medium according to claim 49, wherein leading-edge jitter and trailing-edge jitter are distinguished each other.

51. (New) An optical storage medium according to claim 46, wherein an error rate is detected as the playback signal quality.

52. (New) An optical storage medium according to claim 46, wherein the optical storage medium includes multiple recording layers, wherein playback signal quality is set for each layer.

53. (New) An optical storage medium according to claim 52, wherein the quality of the layer farthest from the optical pickup head during recording is highest.

54. (New) An optical storage medium according to claim 46, wherein the playback signal quality threshold value is written to a specific area of the optical storage medium.

55. (New) An optical storage medium according to claim 54, wherein the specific area is a read-only area.

56. (New) An optical storage medium according to claim 46, wherein signals also are recorded to tracks adjacent to a track having a specified playback signal quality.

57. (New) An optical storage medium according to claim 56, wherein the track having a specified playback signal quality is recorded before recording to the adjacent tracks.

58. (New) An optical storage medium according to claim 57, wherein the emission power of the laser beam when recording the adjacent tracks is greater than the emission power of the laser beam when recording the track having a specified playback signal quality.

59. (New) An optical storage medium according to claim 56, wherein the track having a specified playback signal quality is recorded after recording to one adjacent track.

60. (New) An optical storage medium according to claim 56, wherein the track having a specified playback signal quality is recorded after recording to both adjacent tracks.

61. (New) An optical storage medium according to claim 46, wherein the track having a specified playback signal quality is recorded multiple times.

62. (New) An optical storage medium according to claim 61, wherein the optical storage medium has a specified playback signal quality in all of a specific number of recordings.

63. (New) An optical storage medium according to claim 61, wherein the optical storage medium is recorded at a second emission power level after recorded at a first emission power level, wherein the first emission power level is higher than the second emission power level.

64. (New) An optical disc drive for reading an optical storage medium including multiple tracks formed concentrically or in a spiral for recording information using marks and spaces between the marks by emitting a light beam to the recording surface of the tracks,

wherein the optical storage medium has a first playback signal quality denoted by a signal not including edges adjacent to the shortest marks and/or the shortest spaces.

65. (New) An optical disc drive for reading an optical storage medium including multiple tracks formed concentrically or in a spiral for recording information using marks and spaces between the marks by emitting a light beam to the recording surface of the tracks,

wherein the optical storage medium has a first playback signal quality denoted by a signal not including edges adjacent to the shortest marks and/or the shortest spaces, and a second playback signal quality denoted by a signal including edges adjacent to the shortest marks and/or the shortest spaces.

66. (New) An optical disc drive for recording comprising:

a signal recording means for recording a signal;

a signal reproducing means for reproducing the recorded signal;

a detection means for detecting a shortest mark or a shortest space in the reproduced signal; and

a playback signal quality detection means for detecting playback signal quality in a signal not including edges adjacent to the detected shortest mark or shortest space,

whereby a signal not including edges adjacent to the shortest marks and/or the shortest spaces has a first playback signal quality.

67. (New) An optical disc drive according to claim 66, wherein a signal including edges adjacent to the shortest marks and/or the shortest spaces denotes a second playback signal quality.

68. (New) An optical disc drive according to claim 67, wherein the first playback signal quality is higher than the second playback signal quality.

69. (New) An optical disc drive according to claim 64, wherein the optical disc drive detects jitter as playback signal quality.

70. (New) An optical disc drive according to claim 69, wherein the optical disc drive distinguishes leading-edge jitter and trailing-edge jitter.

71. (New) An optical disc drive according to claim 64, wherein the optical disc drive detects an error rate as playback signal quality.

72. (New) An optical disc drive according to claim 66, wherein the optical disc drive sets playback signal quality for each recording layer of an optical storage medium having multiple recording layers.

73. (New) An optical disc drive according to claim 72, wherein the quality of the layer farthest from the optical pickup head during recording is highest.

74. (New) An optical disc drive according to claim 66, wherein the playback signal quality threshold value is written to a specific area of the optical disc drive.

75. (New) An optical disc drive according to claim 66, wherein signals are also recorded to tracks adjacent to a track having a specified playback signal quality.

76. (New) An optical disc drive according to claim 75, wherein the track having a specified playback signal quality is recorded before recording to the adjacent tracks.

77. (New) An optical disc drive according to claim 76, wherein the emission power of the laser beam when recording the adjacent tracks is greater than the emission power of the laser beam when recording the track having a specified playback signal quality.

78. (New) An optical disc drive according to claim 75, wherein the track having a specified playback signal quality is recorded after recording to one adjacent track.

79. (New) An optical disc drive according to claim 75, wherein the track having a specified playback signal quality is recorded after recording to both adjacent tracks.

80. (New) An optical disc drive according to claim 75, wherein the track having a specified playback signal quality is recorded multiple times.

81. (New) An optical disc drive according to claim 80, wherein the optical disc drive has a specified playback signal quality in all of a specific number of recordings.

82. (New) An optical disc drive according to claim 80, wherein the optical disc drive records at a second emission power level after recording at a first emission power level, wherein the first emission power level is higher than the second emission power level.

83. (New) An optical disc drive according to claim 64, wherein the optical disc drive determines emission power for recording according to the detected playback signal quality.

84. (New) An optical disc drive according to claim 83, wherein the emission power is determined in an area outside the user area for recording user data.

85. (New) An optical disc drive according to claim 20, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

86. (New) An optical disc drive according to claim 21, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

87. (New) An optical disc drive according to claim 22, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

88. (New) An optical disc drive according to claim 23, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

89. (New) An optical disc drive according to claim 24, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

90. (New) An optical disc drive according to claim 25, wherein the recording layer of the optical storage medium enables repeatedly recording and erasing information.

91. (New) An optical disc drive according to claim 20, wherein the recording layer of the optical storage medium can be recorded only once.

92. (New) An optical disc drive according to claim 21, wherein the recording layer of the optical storage medium can be recorded only once.

93. (New) An optical disc drive according to claim 22, wherein the recording layer of the optical storage medium can be recorded only once.

94. (New) An optical disc drive according to claim 23, wherein the recording layer of the optical storage medium can be recorded only once.

95. (New) An optical disc drive according to claim 24, wherein the recording layer of the optical storage medium can be recorded only once.

96. (New) An optical disc drive according to claim 25, wherein the recording layer of the optical storage medium can be recorded only once.

97. (New) An optical disc drive according to claim 20, wherein the recording layer of the optical storage medium is read-only.

98. (New) An optical disc drive according to claim 21, wherein the recording layer of the optical storage medium is read-only.

99. (New) An optical disc drive according to claim 22, wherein the recording layer of the optical storage medium is read-only.

100. (New) An optical disc drive according to claim 23, wherein the recording layer of the optical storage medium is read-only.

101. (New) An optical disc drive according to claim 24, wherein the recording layer of the optical storage medium is read-only.

102. (New) An optical disc drive according to claim 25, wherein the recording layer of the optical storage medium is read-only.

103. (New) An optical disc drive according to claim 22, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be recorded only once.



104. (New) An optical disc drive according to claim 23, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be recorded only once.

105. (New) An optical disc drive according to claim 22, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be repeatedly recorded and erased.

106. (New) An optical disc drive according to claim 23, wherein the first recording layer of the optical storage medium is read-only and the second recording layer can be repeatedly recorded and erased.

107. (New) An optical disc drive according to claim 33, wherein the evaluation standard is jitter.

108. (New) An optical disc drive according to claim 33, wherein the evaluation standard is an error rate.

109. (New) An optical disc drive according to claim 33, wherein the evaluation standard is the time period of an obtained signal.

110. (New) An optical disc drive according to claim 32, wherein mark length is adjusted by adjusting the power of the laser beam emitted from the optical pickup head.

111. (New) An optical disc drive according to claim 33, wherein mark length is adjusted by adjusting the power of the laser beam emitted from the optical pickup head.

112. (New) An optical disc drive according to claim 32, wherein mark length is adjusted by adjusting the pulse width of the laser beam emitted from the optical pickup head.

113. (New) An optical disc drive according to claim 33, wherein mark length is adjusted by adjusting the pulse width of the laser beam emitted from the optical pickup head.

114. (New) An optical disc drive according to claim 32, wherein the optical disc drive measures jitter from an optical storage medium where the width of 2T-long digital data marks is narrower than the width of digital data marks longer than 2T.

115. (New) An optical disc drive according to claim 33, wherein the optical disc drive measures jitter from an optical storage medium where the width of 2T-long digital data marks is narrower than the width of digital data marks longer than 2T.

116. (New) An optical disc drive according to claim 32, wherein the optical disc drive measures jitter in a signal obtained by emitting a light beam to the first recording layer of an optical storage medium having a first recording layer and a second recording layer,

wherein the first recording layer is a semi-transparent film that passes part of the light incident thereon,

wherein the light passing the first recording layer reaches the second recording layer.

117. (New) An optical disc drive according to claim 33, wherein the optical disc drive measures jitter in a signal obtained by emitting a light beam to the first recording layer of an optical storage medium having a first recording layer and a second recording layer,

wherein the first recording layer is a semi-transparent film that passes part of the light incident thereon,

wherein the light passing the first recording layer reaches the second recording layer.

118. (New) An optical disc drive according to claim 20, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

119. (New) An optical disc drive according to claim 21, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

120. (New) An optical disc drive according to claim 22, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

121. (New) An optical disc drive according to claim 23, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

122. (New) An optical disc drive according to claim 24, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

123. (New) An optical disc drive according to claim 25, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

124. (New) An optical disc drive according to claim 31, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

125. (New) An optical disc drive according to claim 32, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

126. (New) An optical disc drive according to claim 33, where a signal reproduced from a pattern repeatedly recording 2T-long digital data marks and spaces is 12pp, a signal reproduced from a pattern repeatedly recording 8T-long digital data marks and spaces is 18pp, and  $12\text{pp}/18\text{pp} < 0.2$ .

127. (New) An optical disc drive according to claim 20, where the length of a pair of digital data marks and spaces of length 2T is ML, the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is NA, and  $ML < \lambda/(1.25 * NA)$ .

128. (New) An optical disc drive according to claim 21, where the length of a pair of digital data marks and spaces of length 2T is ML, the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is NA, and  $ML < \lambda/(1.25 * NA)$ .

129. (New) An optical disc drive according to claim 22, where the length of a pair of digital data marks and spaces of length 2T is ML, the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is NA, and  $ML < \lambda/(1.25 * NA)$ .

130. (New) An optical disc drive according to claim 23, where the length of a pair of digital data marks and spaces of length 2T is ML, the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is NA, and  $ML < \lambda/(1.25 * NA)$ .

131. (New) An optical disc drive according to claim 24, where the length of a pair of digital data marks and spaces of length  $2T$  is  $ML$ , the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is  $NA$ , and  $ML < \lambda/(1.25 * NA)$ .

132. (New) An optical disc drive according to claim 25, where the length of a pair of digital data marks and spaces of length  $2T$  is  $ML$ , the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is  $NA$ , and  $ML < \lambda/(1.25 * NA)$ .

133. (New) An optical disc drive according to claim 31, where the length of a pair of digital data marks and spaces of length  $2T$  is  $ML$ , the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is  $NA$ , and  $ML < \lambda/(1.25 * NA)$ .

134. (New) An optical disc drive according to claim 32, where the length of a pair of digital data marks and spaces of length  $2T$  is  $ML$ , the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is  $NA$ , and  $ML < \lambda/(1.25 * NA)$ .

135. (New) An optical disc drive according to claim 33, where the length of a pair of digital data marks and spaces of length  $2T$  is  $ML$ , the wavelength of the light beam emitted from the optical pickup head is  $\lambda$ , the numeric aperture of the collector optics of the optical pickup head is  $NA$ , and  $ML < \lambda/(1.25 * NA)$ .

136. (New) An optical disc drive according to claim 20, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

137. (New) An optical disc drive according to claim 21, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

138. (New) An optical disc drive according to claim 22, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

139. (New) An optical disc drive according to claim 23, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

140. (New) An optical disc drive according to claim 24, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

141. (New) An optical disc drive according to claim 25, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

142. (New) An optical disc drive according to claim 31, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

143. (New) An optical disc drive according to claim 32, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

144. (New) An optical disc drive according to claim 33, further comprising a gain adjustment means so that variation in the amplitude of signals input to the demodulation means is small when the reflectivity of the optical storage medium varies.

145. (New) An optical disc drive according to claim 65, wherein the optical disc drive detects jitter as playback signal quality.

146. (New) An optical disc drive according to claim 66, wherein the optical disc drive detects jitter as playback signal quality.

147. (New) An optical disc drive according to claim 65, wherein the optical disc drive detects an error rate as playback signal quality.

148. (New) An optical disc drive according to claim 66, wherein the optical disc drive detects an error rate as playback signal quality.

149. (New) An optical disc drive according to claim 65, wherein the optical disc drive determines emission power for recording according to the detected playback signal quality.

150. (New) An optical disc drive according to claim 66, wherein the optical disc drive determines emission power for recording according to the detected playback signal quality.